STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 146886

TO: Lansana Nyalley **Location: 5b21/5c18** **Art Unit: 1621** **Friday, March 11, 2005** **Case Serial Number: 10/623293**	**From: Noble Jarrell** **Location: Biotech-Chem Library** **Rem 1B71** **Phone: 272-2556** **Noble.jarrell@uspto.gov**

Search Notes

REM. 5821
EXT. 20697

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center 146886

Requester's Full Name: LANSANA NYALLEY Examiner #: 80552 Date: _____
Art Unit: 1621 Phone Number ~~30~~ 571-272-0697 Serial Number: 10/623,293
Mail Box and Bldg/Room Location: 5C18 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

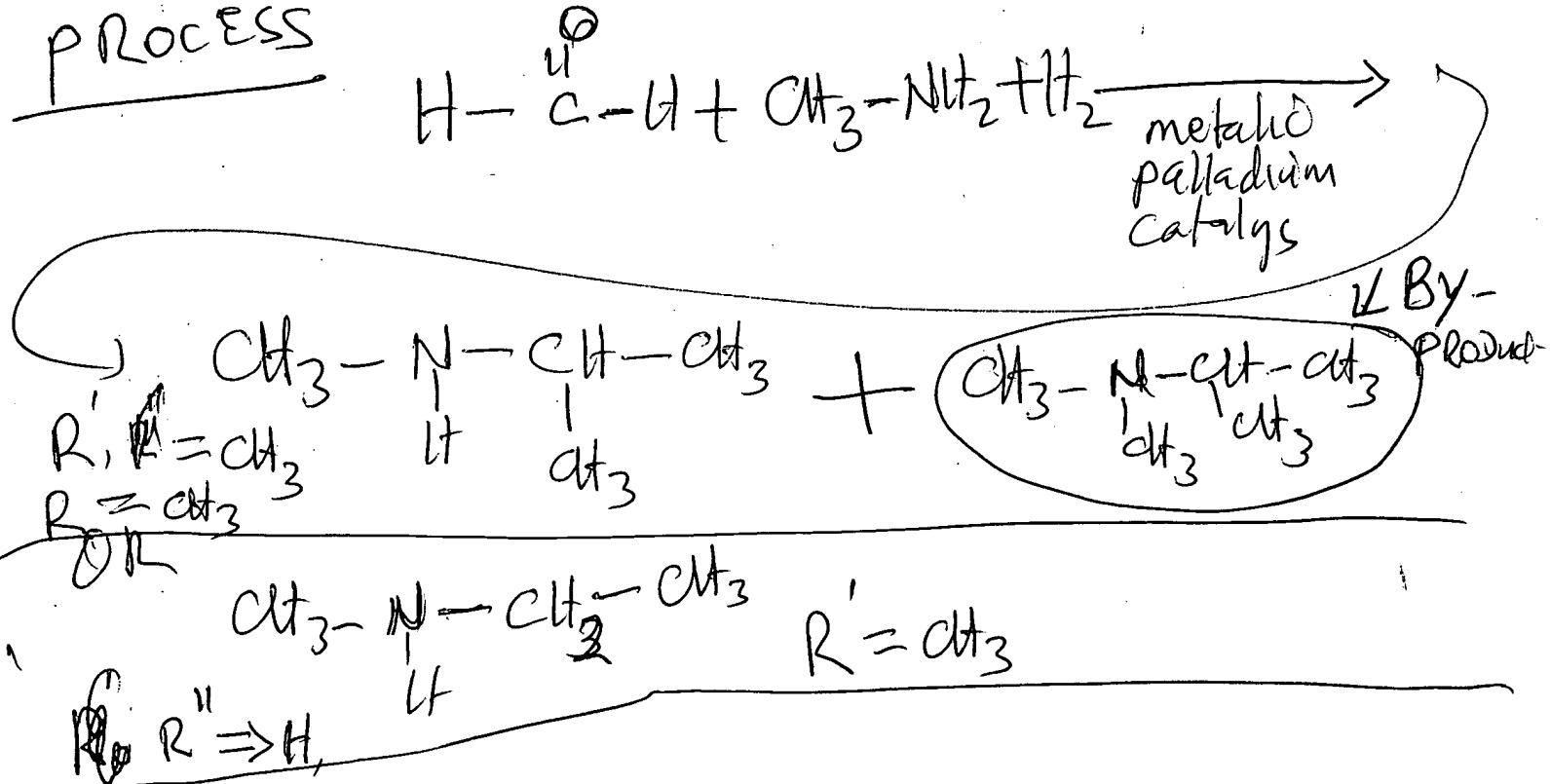
Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

PROCESS



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=> b reg
FILE 'REGISTRY' ENTERED AT 13:43:46 ON 11 MAR 2005

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1
DICTIONARY FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l11 tot

L11 ANSWER 1 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **794520-70-0** REGISTRY
CN **Hydrogen, octahydrate (9CI)** (CA INDEX NAME)
MF **H2 O . 1/8 H2**
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PRP (Properties)
CRN (1333-74-0)

●8 H_2O

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 2 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **166530-34-3** REGISTRY
CN **Hydrogen, hydrate (1:2) (9CI)** (CA INDEX NAME)
MF **H2 O . 1/2 H2**
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
CRN (1333-74-0)

●2 H_2O

5 REFERENCES IN FILE CA (1907 TO DATE)

5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 3 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **166529-94-8** REGISTRY
CN **Hydrogen, hydrate (2:1) (9CI)** (CA INDEX NAME)
MF **H2 O . 2 H2**
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PRP (Properties)
CRN (1333-74-0)

●1/2 H_2O

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 4 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **152076-63-6** REGISTRY
CN **Hydrogen, hexahydrate (9CI)** (CA INDEX NAME)
MF **H2 O . 1/6 H2**
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
CRN (1333-74-0)

●6 H_2O

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 5 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **152076-62-5** REGISTRY
CN **Hydrogen, monohydrate (9CI)** (CA INDEX NAME)
MF **H2 O . H2**
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PROC (Process); PRP (Properties)
CRN (1333-74-0)

●H_2O

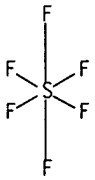
8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 6 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN

RN **152067-50-0** REGISTRY
CN **Hydrogen, mixt. with (OC-6-11)-sulfur fluoride (SF6) (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Sulfur fluoride (SF6), (OC-6-11)-, mixt. contg. (9CI)
OTHER NAMES:
CN **Hydrogen-sulfur hexafluoride mixt.**
MF **F6 S . H2**
CI MXS
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: USES (Uses)

CM 1

CRN 2551-62-4
CMF F6 S



CM 2

CRN 1333-74-0
CMF H2

H–H

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 7 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **53280-39-0** REGISTRY
CN **Hydrogen, hydrate (9CI)** (CA INDEX NAME)
MF **H2 O . x H2**
LC STN Files: CA, CAPLUS, GMELIN*
(*File contains numerically searchable property data)
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PRP (Properties); USES (Uses)
CRN (1333-74-0)

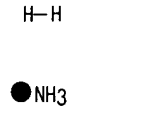
H–H

● x H_2O

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

Search done by Noble Jarrell

L11 ANSWER 8 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **12710-60-0** REGISTRY
CN **Hydrogen, monoammoniate (9CI)** (CA INDEX NAME)
DR 55067-05-5
MF **H3 N . H2**
LC STN Files: CA, CAPLUS, GMELIN*
(*File contains numerically searchable property data)
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PRP (Properties)
CRN (1333-74-0)



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 9 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **11062-36-5** REGISTRY
CN **Hydrogen, ion (H2-) (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN **Atomic hydrogen ion(2-)**
CN **H2-**
MF H
LC STN Files: CA, CAPLUS, TOXCENTER
DT.CA CAplus document type: Conference; Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

69 REFERENCES IN FILE CA (1907 TO DATE)
69 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 10 OF 10 REGISTRY COPYRIGHT 2005 ACS on STN
RN **1333-74-0** REGISTRY
CN **Hydrogen (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN **Dihydrogen**
CN **Hydrogen (H2)**
CN **Hydrogen molecule**
CN **Mol. hydrogen**
CN **Molecular hydrogen**
CN **Orthohydrogen**
CN **Parahydrogen**
CN Protium
DR 725200-57-7
MF **H2**
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,

ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

H-H

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

296023 REFERENCES IN FILE CA (1907 TO DATE)
3624 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
296159 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> => d his

(FILE 'HOME' ENTERED AT 13:13:19 ON 11 MAR 2005)

FILE 'HCAPLUS' ENTERED AT 13:13:23 ON 11 MAR 2005
L1 2 (US20040019238 OR US US20040015016)/PN

FILE 'REGISTRY' ENTERED AT 13:14:14 ON 11 MAR 2005

FILE 'HCAPLUS' ENTERED AT 13:14:16 ON 11 MAR 2005
L2 TRA L1 1- RN : 16 TERMS

FILE 'REGISTRY' ENTERED AT 13:14:16 ON 11 MAR 2005
L3 16 SEA L2

FILE 'WPIX' ENTERED AT 13:14:18 ON 11 MAR 2005
L4 1 (US20040019238 OR US US20040015016)/PN
FILE 'HCAPLUS' ENTERED AT 13:37:03 ON 11 MAR 2005
E CARBONYL/CT
L5 5284 (CARBONYL (1A) COMPOUND?)/CW (L) RACT+NT/RL

FILE 'REGISTRY' ENTERED AT 13:38:37 ON 11 MAR 2005
E HYDROGEN/CN
L6 1 E3

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L7        4246 H2
L8         547 L7 AND HYDROGEN
L9             QUE (PMS OR MAN OR IDS)/CI OR COMPD OR COMPOUND OR UNSPECIFIED
L10         53 L8 NOT L9
               SEL RN 1 21-25 44 50 52-53
L11         10 E1-10 AND L10

     FILE 'HCAPLUS' ENTERED AT 13:44:16 ON 11 MAR 2005
L12            QUE (L11 OR ?HYDROGEN/BI OR H2? OR MOL? (1A) HYDROGEN OR PROTIU
L13        229 L12 AND L5
               E PRIMARY AMINE/CT
               E E4+ALL
               E AMINES/CT
L14       3117 AMINE#/CW (L) PRIMARY
L15       1343 L14 (L) RACT+NT/RL
L16          3 L15 AND L13
               E SECONDARY AMINES/CT
               E E3+ALL
L17       4664 AMINE#/CW (L) SECONDARY
L18          2 L16 AND L17
L19          2 L13 AND L14 AND L17
L20            QUE L11 OR ?HYDROGEN/BI OR H2? OR MOL? (1A) HYDROGEN OR PROTIUM
L21          5 L5 AND L20 AND L14
L22          6 L5 AND L20 AND L17
L23          8 L21-22
               E SU W/AU
L24         61 E3,E22-23
               E SU WEI/AU
L25        142 E3,E37-38
               E NELLI C/AU
L26          6 E5-7
L27          2 L23 AND L24-26
L28          6 L23 NOT L27

     FILE 'WPIX' ENTERED AT 14:52:13 ON 11 MAR 2005
L29     340318 E31-N05B/MC OR J5?/M0,M1,M2,M3,M4,M5,M6 OR (C07C045 OR C07C047
               E HYDROGEN/CN
               E E3+ALL
L30          6 E3-6,E12
               E HYDROGEN/DRN
               E E3A+LL
               E HYDROGEN/DRN
               E E3+ALL
L31      33729 1532/DRN OR R01532/DCN
L32     344423 (?HYDROGEN OR H2? OR MOL? (1A) HYDROGEN OR PROTIUM)/BIX
L33      49112 L29 AND L30-32
L34      64568 (A01-E05 OR B10-B? OR C10-B?)/MC
L35     288229 (H100 OR H101)/M0,M1,M2,M3,M4,M5,M6
L36     229076 H102/M0,M1,M2,M3,M4,M5,M6
L37      20418 L33 AND L35
L38      15063 L37 AND L36
L39        393 L38 AND H?/MC
L40        302 L39 NOT (PY>2002 OR AY>2002 OR PRY>2002)
L41       2638 (E11-D OR E11-F02 OR M25-D)/MC
L42          5 L41 AND L40
               E WEI S/AU
               E SU W/AU
L43        419 E3,E15
               E NELLI C/AU
L44          2 E4
L45          2 L43-44 AND L38
L46          5 L42 NOT L45

     FILE 'HCAPLUS' ENTERED AT 15:06:23 ON 11 MAR 2005
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L47 2 L19 OR L27

=> b hcap
FILE 'HCAPLUS' ENTERED AT 15:07:03 ON 11 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 11 Mar 2005 VOL 142 ISS 12
FILE LAST UPDATED: 10 Mar 2005 (20050310/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d all l47 tot

L47 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:80390 HCAPLUS
DN 140:130121
ED Entered STN: 01 Feb 2004
TI Preparation of secondary amines by the catalytic reductive alkylation of carbonyl compounds with primary amines
IN **Su, Wei-yang; Nelli, Christopher H.**
PA Huntsman Petrochemical Corporation, USA
SO U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U.S. Ser. No. 200,361.
CODEN: USXXCO
DT Patent
LA English
IC ICM C07C029-26
NCL 564472000; 564473000
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 67
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004019238	A1	20040129	US 2003-623293	20030718
	US 2004015016	A1	20040122	US 2002-200361	20020722
PRAI	US 2002-200361	A2	20020722		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004019238	ICM	C07C029-26
	NCL	564472000; 564473000

OS CASREACT 140:130121; MARPAT 140:130121
AB A process for the reductive alkylation of primary amines [e.g., 1-amino-3-(dimethylamino)propane] to form secondary amines [e.g., 1-(isopropylamino)-3-(dimethylamino)propane] is described using the high-pressure reaction of the primary amines with a carbonyl compound alkylating agent (e.g., acetone) and **hydrogen** in the presence of a catalyst which comprises metallic palladium (e.g., Pd/C).
ST secondary amine prepn catalytic reductive alkylation; isopropylaminodimethylaminopropane prepn

IT Charcoal
RL: CAT (Catalyst use); USES (Uses)
(catalyst support; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(diamines; preparation of **secondary** amines by the catalytic reductive alkylation of carbonyl compds. with **primary** amines)
IT **Carbonyl compounds** (organic), reactions
Ketones, reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**primary**; preparation of **secondary** amines by the catalytic reductive alkylation of carbonyl compds. with **primary** amines)
IT Alkylation catalysts
(reductive; Pd in the preparation of secondary amines by the reductive alkylation of carbonyl compds. with primary amines)
IT Alkylation
(reductive; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT **Amines**, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(**secondary**; preparation of **secondary** amines by the catalytic reductive alkylation of carbonyl compds. with **primary** amines)
IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, catalyst support; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT 67-64-1DP, Acetone, reductive alkylation products with Jeffamines and **hydrogen** **1333-74-0DP**, **Hydrogen**, reductive alkylation products with Jeffamines and acetone 9046-10-0DP, Jeffamine D-230, reductive alkylation products with acetone and **hydrogen** 39423-51-3DP, Jeffamine T-403, reductive alkylation products with acetone and **hydrogen** 63905-13-5P 343595-80-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)
IT 67-64-1, Acetone, reactions 78-93-3, MEK, reactions 107-87-9, 2-Pentanone 108-10-1, MIBK 109-55-7, 1-Amino-3-(dimethylamino)propane 110-12-3, Methylisoamyl ketone 123-05-7 591-78-6, 2-Hexanone **1333-74-0**, **Hydrogen**, reactions 2855-13-2, Isophorone diamine
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

L47 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:60193 HCAPLUS
DN 140:113242
ED Entered STN: 26 Jan 2004
TI Preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compounds
IN **Su, Wei-yaug**; **Nelli, Christopher H.**
PA Huntsman Petrochemical Corporation, USA
SO U.S. Pat. Appl. Publ., 4 pp.

CODEN: USXXCO
DT Patent
LA English
IC ICM C07C029-26
NCL 564446000; 564472000; 564473000
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 48, 67
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004015016	A1	20040122	US 2002-200361	20020722
	US 2004019238	A1	20040129	US 2003-623293	20030718
	WO 2004009529	A1	20040129	WO 2003-US22666	20030721

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-200361 A2 20020722
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004015016	ICM	C07C029-26
	NCL	564446000; 564472000; 564473000

OS CASREACT 140:113242; MARPAT 140:113242
AB A process for the reductive alkylation of primary amines (e.g., dimethylaminopropylamine) into secondary amines [e.g., 1-(dimethylamino)-3-(isopropylamino)propane] is described by thew high-pressure reaction of the primary amine with an alkylating agent (e.g., a carbonyl compound such as acetone) and **hydrogen** in the presence of a catalyst which comprises metallic palladium.
ST dimethylaminopropylamine reductive alkylation acetone manuf dimethylaminoisopropylaminopropane
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(diamines; preparation of **secondary** amines via the catalytic alkylation of **primary** amines with carbonyl compds.)
IT **Carbonyl compounds** (organic), reactions
Ketones, reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**primary**; preparation of **secondary** amines via the catalytic alkylation of **primary** amines with carbonyl compds.)
IT Alkylation catalysts
(reductive, Pd; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT Alkylation
(reductive; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. via)
IT Charcoal
RL: CAT (Catalyst use); USES (Uses)
(support; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, support; preparation of secondary amines via the catalytic

alkylation of primary amines with carbonyl compds. using)
IT 63905-13-5P 343595-80-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT 109-55-7, 1-Amino-3-(dimethylamino)propane 2855-13-2, Isophoronediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 67-64-1, Acetone, reactions 78-93-3, MEK, reactions 107-87-9, 2-Pentanone 108-10-1, MIBK 110-12-3, Methyl isoamyl ketone 123-05-7 591-78-6, 2-Hexanone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT **1333-74-0, Hydrogen**, reactions
RL: **RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)**
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)

=> d all l28 tot

L28 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:1079727 HCAPLUS
DN 142:55652
ED Entered STN: 17 Dec 2004
TI Method for producing organic compounds by substituting halogen atoms
IN Funaki, Setsuko; Taniguchi, Yoshiteru; Nobori, Tadahito; Yamamoto, Yoshihiro; Hara, Isao; Hayashi, Takaomi; Mizutani, Kazumi; Kiyono, Shinji
PA Mitsui Chemicals, Inc., Japan
SO Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07B039-00
ICS C07B037-04; C07B041-00; C07B043-00; C07D307-24; C07D307-14; C07C017-20; C07C253-14; C07C255-19; C07C331-18; C07D307-32; C07C319-14; C07C045-63; C07C205-02; C07C209-08; C07F009-06
CC 21-1 (General Organic Chemistry)
Section cross-reference(s): 23, 24, 25, 27, 29
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1486479	A1	20041215	EP 2004-253380	20040607
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	JP 2005023057	A2	20050127	JP 2003-389015	20031119
	US 2004256743	A1	20041223	US 2004-864533	20040610
PRAI	JP 2003-168116	A	20030612		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1486479	ICM	C07B039-00
	ICS	C07B037-04; C07B041-00; C07B043-00; C07D307-24; C07D307-14; C07C017-20; C07C253-14; C07C255-19; C07C331-18; C07D307-32; C07C319-14; C07C045-63; C07C205-02; C07C209-08; C07F009-06
EP 1486479	ECLA	C07B037/04; C07B041/00; C07B043/00; C07C017/20D6+23/08;

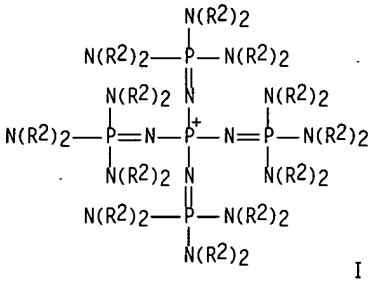
C07C029/124; C07C067/10+69/007; C07C067/287+69/003; C07C253/14; C07C253/30; C07C331/14; C07D307/14; C07D307/24; C07D307/32C

JP 2005023057 FTERM 4C037/CA16; 4C037/DA03; 4C037/DA06; 4C037/DA13; 4C037/FA10; 4C062/AA18; 4H006/AA02; 4H006/AC24; 4H006/AC30; 4H006/AC41; 4H006/AC48; 4H006/AC51; 4H006/AC52; 4H006/AC54; 4H006/AC60; 4H006/AC63; 4H006/BA53; 4H006/BE61; 4H006/BJ20; 4H006/BM10; 4H006/BM71; 4H006/EA12; 4H006/FC52; 4H006/FE11; 4H006/GN03; 4H006/GP05; 4H006/KA05; 4H006/KA30; 4H006/KA31; 4H006/QN04; 4H006/QN30; 4H006/TA04; 4H006/TB53; 4H039/CA51; 4H039/CA70; 4H039/CD20; 4H039/CL60

US 2004256743 ECLA C07B037/04; C07B041/00; C07B043/00; C07C017/20D6+23/08; C07C029/124; C07C067/10+69/007; C07C067/287+69/003; C07C253/14; C07C253/30; C07C331/14; C07D307/14; C07D307/24; C07D307/32C

OS CASREACT 142:55652

GI



I

AB The invention pertains to a method in which a halogen atom of an organic compound is replaced with a group derived from a nucleophilic agent, at high yield and high efficiency, by the following method which includes a step of reacting the nucleophilic agent with an organic material having a halogen atom bonded to a carbon atom having four .sigma. bonds, more specifically: a method for producing organic compound R1Q [R1 = alkane, cycloalkane, ester, ketone, lactone, heterocycle, aryl, nitrile, benzyl; Q = an inorg. acid or an active **hydrogen** compound (derived by eliminating a proton), a halogen atom (different from the halogen atom in the organic starting material having the halogen atom bonded to the carbon atom having the four .sigma. bonds)], the method includes a step of reacting a compound MQa (M = an alkali metal atom, an alkali earth metal atom, or a rare earth metal atom; a = 1 - 3) with an organic starting material, R1X [X = halogen (having at least one halogen atom bonded to a carbon atom having four .sigma. bonds so as to replace the halogen atom in the organic starting material with Q)] in the presence of phosphonium compound I.cntdot.Z- [Z- = anion (derived by eliminating a proton from an inorg. acid or an active **hydrogen** compound); R2 = C1-10 hydrocarbon group (preferably Me, Et); N(R2)2 = a ring (e.g., pyrrolidine, piperidine)]. Thus, 3-chlorotetrahydrofuran was treated with NaCN in DMF containing catalytic phosphazenium compound I.cntdot.Cl- (R2 = Me) to give 85% tetrahydrofuran-3-carbonitrile after 6 h.

ST halogen contg org compd reaction nucleophile; hydrocarbon substituted prepn; chlorocarbon nucleophilic substitution phosphonium phosphoranylideneamino salt catalyst; inorg acid alkali alk rare earth salt reaction chlorocarbon; phosphazenium salt catalyst nucleophilic substitution chlorocarbon

IT Hydrocarbons, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(active methylene, salts, alkali, alkaline and rare earth metal; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aliphatic, **secondary**, alkali, alkaline and rare earth metal salts, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Alcohols, reactions
Carbonyl compounds (organic), reactions
Thiols (organic), reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(alkali, alkaline and rare earth metal salts, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Cyanides (inorganic), reactions
Halides
Hydroxides (inorganic)
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali, alkaline and rare earth metal, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Azides
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali, alkaline and rare earth, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Azides
RL: SPN (Synthetic preparation); PREP (Preparation)
(alkyl azides; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aryl, **secondary**, alkali, alkaline and rare earth metal salts, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Cycloalkanes
Heterocyclic compounds
Hydrocarbons, reactions
Lactones
RL: RCT (Reactant); RACT (Reactant or reagent)
(chloro, nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Aromatic compounds
RL: RCT (Reactant); RACT (Reactant or reagent)
(chloroarom., nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Alkali metals, reactions
Alkaline earth metals
Rare earth metals, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(derivs., nucleophilic substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Carboxylic acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(esters, halo, chloro, nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids

or active methylene compds.)
IT Carboxylic acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(esters, .alpha.-metallo, alkali, alkaline and rare earth, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Carboxylic acids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(esters; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Hydrocarbons, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(halo, non-chloro containing; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Phenols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroxy and dihydroxy, alkali, alkaline and rare earth metal salts, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(inorg., salts, alkali, alkaline and rare earth metal; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Amines, preparation
Aromatic compounds
Ethers, preparation
Nitriles, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Nucleophiles
(nucleophilic substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Alkyl chlorides
RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Substitution reaction, nucleophilic
(of chlorocarbons in the presence of phosphazenium salts; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Nitrites
Sulfides, preparation
Thiocyanates
RL: SPN (Synthetic preparation); PREP (Preparation)
(organic; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Phosphonium compounds
RL: CAT (Catalyst use); USES (Uses)
(phosphazenium salts, nucleophilic substitution of chlorocarbons in the presence of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Carboxylic acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(salts, alkali, alkaline and rare earth metal, substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)
IT Ketones, reactions
Nitriles, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(.alpha.-chloro, nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)

IT 78-97-7P, 2-Hydroxypropionitrile 91-01-0P, Benzhydrol 120-45-6P, 1-Phenylethyl propionate 450-95-3P, 2-Fluoroacetophenone 601-76-3P, 1,1-Dinitropropane 1481-36-3P, Fluorocyclopentane 1738-36-9P, Methoxyacetonitrile 2081-44-9P, 4-Hydroxytetrahydropyran 2163-44-2P 2206-38-4P, Cyclohexyl phenyl ether 4254-02-8P, Cyanocyclopentane 4538-80-1P, 1-Fluoro-3,3-dimethyl-2-butanone 13310-75-3P, 4-Cyanoheptane 13888-04-5P 14631-44-8P, 3-Cyanotetrahydrofuran 16169-82-7P, 1-Methyl-2-propynyl acetate 18677-40-2P, 3-(Butylmercapto)-2-butanone 19354-27-9P, Tetrahydrofurfuryl methyl ether 20654-42-6P, 2-Cyanohexane 34112-17-9P, 1,2-Dicyanocyclohexane 36320-68-0P 51443-95-9P, Fluorocycloheptane 85182-08-7P 108975-83-3P, 9-(Diethylamino)fluorene 150711-45-8P 181289-17-8P 476415-60-8P 808146-72-7P, Ethyl 3-cyano-4-phenylbutyrate 808146-73-8P, Ethyl 4-benzyloxy-3-cyanobutyrate 808146-74-9P, Butyric acid fluoromethyl ester 808146-75-0P, Methyl 2-(butylmercapto)-2-phenylacetate 808146-76-1P, Methyl 3-(thiocyanato)butyrate 808146-77-2P, 2-Iodotetrahydrofuran
RL: SPN (Synthetic preparation); PREP (Preparation)
(method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)

IT 64-19-7D, Acetic acid, metal salts 67-56-1D, Methanol, metal salts 74-90-8D, **Hydrogen** cyanide, metal salts 105-53-3D, Diethyl malonate, metal salts 108-95-2D, Phenol, metal salts 109-79-5D, 1-Butanethiol, metal salts 109-89-7D, Diethylamine, metal salts 124-41-4, Sodium methoxide 127-09-3, Sodium acetate 137-40-6, Sodium propionate 139-02-6, Sodium phenoxide 141-82-2D, Malonic acid, diester metal salts 143-33-9, Sodium cyanide 372-09-8D, Cyanoacetic acid, ester metal salts 463-56-9D, Thiocyanic acid, metal salts 540-72-7, Sodium thiocyanide 541-50-4D, Acetoacetic acid, ester metal salts 816-43-3, Lithium diethylamide 996-82-7, Diethyl sodiomalonate 1310-73-2, Sodium hydroxide, reactions 4779-86-6, Sodium butylthiolate 7664-39-3D, **Hydrogen** fluoride, metal salts 7681-82-5, Sodium iodide, reactions 7732-18-5D, Water, metal salts 7758-09-0, Potassium nitrite 7782-77-6D, Nitrous acid, metal salts 7782-79-8D, **Hydrogen** azide, metal salts 7789-23-3, Potassium fluoride 10034-85-2D, **Hydrogen** iodide, metal salts 26628-22-8, Sodium azide
RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleophilic substitution by, of chlorocarbons; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)

IT 102299-22-9, Tris[tris(dimethylamino)phosphoranylideneamino]phosphine oxide 122951-89-7 195212-22-7 676998-36-0 808146-81-8, Tetrakis[tris(diethylamino)phosphoranylideneamino]phosphonium chloride
RL: CAT (Catalyst use); USES (Uses)
(nucleophilic substitution of chlorocarbons in the presence of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)

IT 90-99-3, Chlorodiphenylmethane 107-14-2, Chloroacetonitrile 532-27-4, 2-Chloroacetophenone 542-18-7, Chlorocyclohexane 600-25-9, 1-Chloro-1-nitropropane 638-28-8, 2-Chlorohexane 672-65-1, .alpha.-Methylbenzyl chloride 822-86-6, trans-1,2-Dichlorocyclohexane 930-28-9, Chlorocyclopentane 998-95-8, 4-Chloroheptane 1617-17-0, 2-Chloropropionitrile 1768-64-5, 4-Chlorotetrahydropyran 2453-46-5, Chlorocycloheptane 3003-84-7, 2-(Chloromethyl)tetrahydrofuran 4091-39-8, 3-Chloro-2-butanone 5061-21-2, .alpha.-Bromo-.gamma.-butyrolactone 6513-13-9, Ethyl 3-chlorovalerate 6630-65-5, 9-Chlorofluorene 7425-45-8, Ethyl 2-chlorobutyrate 7425-48-1 7476-66-6, Methyl 2-chloro-2-phenylacetate 13369-70-5, 2-Chlorotetrahydrofuran 13547-70-1, 1-Chloro-3,3-dimethyl-2-butanone 19311-38-7, 3-Chlorotetrahydrofuran 21020-24-6, 3-Chloro-1-butyne

33657-49-7, Chloromethyl butyrate 89181-22-6, 3-(Chloromethyl)tetrahydrofuran 808146-78-3, Ethyl 3-chloro-4-phenylbutyrate 808146-79-4, Ethyl 4-(benzyloxy)-3-chlorobutyrate 808146-80-7, Ethyl 3-chloro-5-methylcaproate
RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleophilic substitution of; method for producing organic compds. by substituting halogen atoms with inorg. acids or active methylene compds.)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Jenner, G; TETRAHEDRON 2002, V58(21), P4311 HCAPLUS

(2) Mitsui Chemicals Inc; EP 1275630 A 2003 HCAPLUS

L28 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:1011969 HCAPLUS

DN 142:6566

ED Entered STN: 24 Nov 2004

TI Process for the synthesis of hexanitrohexaazaisowurtzitane in two steps from by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration

IN Cagnon, Guy; Eck, Genevieve; Herve, Gregoire; Jacob, Guy

PA SNPE Materiaux Energetiques, Fr.

SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW

DT Patent

LA French

IC ICM C07D487-22
ICS C06B025-34

CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 45

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1479683	A1	20041124	EP 2004-291080	20040427
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	FR 2855174	A1	20041126	FR 2003-6160	20030522
	US 2004260086	A1	20041223	US 2004-833025	20040428
	JP 2005041860	A2	20050217	JP 2004-153353	20040524
PRAI	FR 2003-6160	A	20030522		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1479683	ICM	C07D487-22
	ICS	C06B025-34
EP 1479683	ECLA	C07D487/22+255E+241C+235C+235C
FR 2855174	ECLA	C07D487/22+255E+241C+235C+235C
US 2004260086	ECLA	C07D487/22+255E+241C+235C+235C
JP 2005041860	FTERM	4C050/AA03; 4C050/BB08; 4C050/CC08; 4C050/DD02; 4C050/EE06; 4C050/FF01; 4C050/GG01; 4C050/HH02; 4C050/HH03; 4C050/HH04

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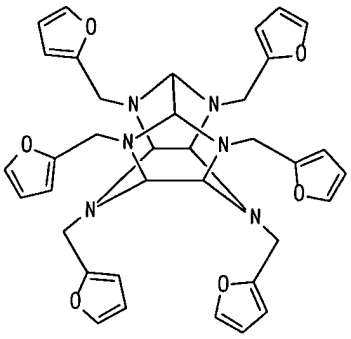

III

AB The invention is related to an improved process for the synthesis of hexanitrohexaazaisowurtzitane (HNIW), 2,4,6,8,10,12-hexanitro-2,4,6,8,10,12-hexaazatetracyclo[5.5.0.05,9.03,11]-dodecane (I), by cyclization of .alpha.,.beta.-dicarbonyls, e.g. glyoxal, with primary amines of formula RNH2, and nitration of the hexasubstituted derivative of hexaazaisowurtzitane of formula 2,4,6,8,10,12-R-2,4,6,8,10,12-hexaazatetracyclo[5.5.0.05,9.03,11]-dodecane (II) [wherein R = heteroarylmethyl, allyl, propargyl, trimethylsilylethyl, naphthylmethyl, sulfenyl]. For example, cyclization of glyoxal with 2-(aminomethyl)furan in the presence of HCOOH/MeCN/**H2O** at 2-10.degree. for 1 h and 10-15.degree. for 2 h gave III in 60% yield with respect to glyoxal. Nitration of III with HNO3/**H2SO4** at 10-65.degree. for 4 h under Ar gave 12% I.

ST hexanitrohexaazaisowurtzitane HNIW synthesis cyclization amine dicarbonyl nitration sulfonitric acid

IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**primary**, starting materials; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with **primary** amines and nitration)

IT Cyclization
Nitration
(synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration)

IT **Carbonyl compounds** (organic), reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(.alpha.,.beta.-dicarbonyl compds. starting materials; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration)

IT 107-11-9, Allylamine 617-89-0, 2-(Aminomethyl)furan
RL: RCT (Reactant); RACT (Reactant or reagent)
(amine starting material; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration)

IT 797057-87-5P 797057-89-7P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration)

IT 13826-86-3, Nitronium tetrafluoroborate
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)
(nitration agent; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha.,.beta.-dicarbonyls with primary amines and nitration)

IT 7697-37-2, Nitric acid, reactions
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)

(nitration reagent; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha...beta.-dicarbonyls with primary amines and nitration)

IT 135285-90-4P, Hexanitrohexaazaisowurtzitane 797057-79-5P 797057-82-0P 797057-86-4P 797057-90-0P 797057-91-1P 797057-92-2P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha...beta.-dicarbonyls with primary amines and nitration)

IT 7664-93-9, Sulfuric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha...beta.-dicarbonyls with primary amines and nitration)

IT 118-31-0, [(1-Naphthyl)methyl]amine 2450-71-7, Propargylamine 3731-52-0, 3-(Aminomethyl)pyridine 4360-51-4, Cinnamylamine 27757-85-3, 2-(Aminomethyl)thiophene 73155-25-6, 4-Chlorobenzenesulfenamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha...beta.-dicarbonyls with primary amines and nitration)

IT 107-22-2, Glyoxal
RL: RCT (Reactant); RACT (Reactant or reagent)
(.alpha...beta.-dicarbonyl starting material; synthesis of hexanitrohexaazaisowurtzitane by cyclization of .alpha...beta.-dicarbonyls with primary amines and nitration)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Cordant Tech Inc; WO 0052011 A 2000 HCAPLUS
(2) Nielsen, A; US 5693794 A 1997 HCAPLUS
(3) Wardle, R; US 6147209 A 2000 HCAPLUS

L28 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:384405 HCAPLUS
DN 142:218727
ED Entered STN: 13 May 2004
TI Reductive amination of some carbonyl compounds catalyzed by platinum metals
AU Yada, Satoru; Takagi, Yuzuru
CS Dep. Chem., Coll. Humanities Sci., Nihon Univ., Tokyo, 156-8550, Japan
SO Kenkyu Kiyo - Nihon Daigaku Bunrigakubu Shizen Kagaku Kenkyusho (2004), 39, 349-385
CODEN: NDBSAL; ISSN: 0369-3562
PB Nihon Daigaku Bunrigakubu Shizen Kagaku Kenkyusho
DT Journal
LA Japanese
CC 21-2 (General Organic Chemistry)
AB The reductive amination of some carbonyl compds. over platinum metals have been studied in ethanol at 50-200.degree. and the **hydrogen** pressure of 7-8 MPa to compare the selectivity of these metals for the formation of the primary amine, the secondary amine, the tertiary amine and the alc., resp. In the reductive amination of nonanal, the yield of the primary amine increased in order: Pd < Os <Pt < Rh < Ir < Ru. A high yield of the primary amine was obtained with Ru (87%), while over Pd the yield was only 24% which was the smallest of the metals investigated. Over Pd and Os catalysts the secondary amine was formed in larger amts. than the primary amine. The yield of primary amine was not increased by the addition of ammonium chloride. On the other hand, the formation of the tertiary amine was greatly increased over Pd catalyst from 6% to 45% in the presence of ammonium chloride. With 2-nonanone, the major product was the corresponding primary amine over platinum metals. In contrast to the results with nonanal, no tertiary amine was found in the products. The secondary amine was also formed not at all (Pd, Ru and Rh) or only to a slight extent (Os), except over Pt and Ir which it was formed in 17% and 12% yields, resp. Over the catalysts other than Pd, Rh and Ir, the

corresponding alc. was formed in larger amts. than in the case of nonanal. Over Pd and Rh the alc. was formed not at all or only slightly, and the primary amine was formed in 100% and 98% selectivities, resp. 3- And 5-nonanones were less reactive than 2-nonanone with Pd, Pt, Rh and Ru; the reactivity decreased in the order: 2- > 3- > 5-nonanone. In the reductive amination of 4-t-butylcyclohexanone, the selectivities for the formation of primary amine and the secondary amine depend on the platinum metals. The yield of the primary amine increased in the order Pt <Os < Ir < Pd < Rh < Ru and was between 59-97%. The reaction route and the stereochem. of the reductive amination of 4-t-butylcyclohexanone were discussed on the basis of the formation and hydrogenation of intermediates such as imine and Schiff base. Although the reductive amination of menthone gave three isomeric primary amines, no secondary amines were detected. The total yields of primary amine isomers ranged between 24-84%, and increased in the order 5% Pt-C < 5% Rh-C < 5% Ru-C < 5% Pd-C. Isomenthone afforded primary amine isomers in lower yields than menthone. The observed stereochem. selectivity as well as the difference in reactivities of menthone and isomenthone have been accounted for by considering this tautomerism. The reductive amination of (+)-camphor did not proceed under the temperature below 100.degree.. At 200.degree., the yield of primary amine isomers increased in the order 5% Ru-C < 5% Pt-C < 5% Rh-C < 5% Pd-C, while the corresponding alc. isomers as byproducts were preferentially produced on 5% Ru-C. In the reaction at a high temperature, the formation of N-alkylamines was observed In general, the reductive amination of more sterically hindered alicyclic ketones proceeded very smoothly with the metal catalysts supported on a carrier such as carbon than unsupported metal catalysts. The reductive amination of acetophenone gave the corresponding alc. in predominant amts. over all of the platinum metals investigated. In the presence of ammonium chloride as additive, the formation of alc. was depressed, resulting in increased selectivities to the primary amine. The different reactivities and selectivities in the reductive amination of the carbonyl compds. have been discussed on the basis of the formation and reaction of the intermediates such as imines, aminals and Schiff bases and also on the structure of the carbonyl compds.

ST reductive amination carbonyl compd platinum metal catalyst

IT Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclic; reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT **Amines**, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(**primary**; reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT Alcohols, preparation
RL: BYP (Byproduct); PREP (Preparation)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT **Carbonyl compounds** (organic), reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT Amination catalysts
(reductive, ruthenium, platinum, rhodium, or palladium; reductive amination of some carbonyl compds. catalyzed by platinum metals)

IT Amination
(reductive; reductive amination of some carbonyl compds. catalyzed by

platinum metals)
IT **Amines**, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(**secondary**; reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT Amines, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(tertiary; reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 7440-02-0, Raney nickel, uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts; reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 98-52-2P, 4-tert-Butylcyclohexanol 98-85-1P, .alpha.-Phenethyl alcohol 143-08-8P, 1-Nonanol 464-15-3P, Camphane 464-43-7P 628-99-9P, 2-Nonanol 75419-01-1P 75419-02-2P
RL: BYP (Byproduct); PREP (Preparation)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 7439-88-5, Iridium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-05-3D, Palladium, supported on carbon 7440-06-4, Platinum, uses 7440-06-4D, Platinum, supported on carbon 7440-16-6, Rhodium, uses 7440-16-6D, Rhodium, supported on carbon 7440-18-8, Ruthenium, uses 7440-18-8D, Ruthenium, supported on carbon 7440-48-4, Cobalt, uses
RL: CAT (Catalyst use); USES (Uses)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 98-53-3, 4-tert-Butylcyclohexanone 98-86-2, Acetophenone, reactions 124-19-6, Nonanal 464-49-3, (+)-Camphor 502-56-7, 5-Nonanone 631-61-8, Ammonium acetate 821-55-6, 2-Nonanone 925-78-0, 3-Nonanone 2216-51-5, (-)-Menthol 7664-41-7, Ammonia, reactions 12125-02-9, Ammonium chloride, reactions 23283-97-8, (+)-Isomenthol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 1196-31-2P, (+)-Isomenthone 14073-97-3P, (-)-Menthone 839716-18-6P, N-(4-tert-Butylcyclohexylidene)(4-tert-butylcyclohexyl)amine 839716-25-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reductive amination of some carbonyl compds. catalyzed by platinum metals)
IT 112-20-9P, Nonylamine 618-36-0P, .alpha.-Phenethylamine 2044-21-5P, Dinonylamine 2044-22-6P, Trinonylamine 2163-33-9P, cis-4-tert-Butylcyclohexylamine 2163-34-0P, trans-4-tert-Butylcyclohexylamine 2198-45-0P, 1-Butylpentylamine 5400-88-4P, 4-tert-Butylcyclohexylamine 10024-74-5P, Bis(1-phenylethyl)amine 13205-58-8P, 1-Methyloctylamine 13280-20-1P, Acetophenone imine 25102-87-8P 32511-34-5P 33787-95-0P, 1-Ethylheptylamine 36653-37-9P, 5-Nonanimine 80516-56-9P 98171-03-0P, Dibornylamine 123436-19-1P 123485-39-2P 123485-40-5P 161585-75-7P, 1,1-Bis(nonylideneamino)nonane 161585-76-8P, N-Nonylidenenonylamine 161585-77-9P, 1-(Dinonylamino)-1-nonene 170555-27-8P, Bis(4-tert-butylcyclohexyl)amine 197958-59-1P, Bis(1-ethylheptyl)amine 213979-89-6P, Bis(1-methyloctyl)amine 213979-90-9P, Bis(1-butylpentyl)amine 213979-91-0P, 2-Nonanimine 213979-92-1P, 3-Nonanimine 213979-93-2P, N-(1-Methyloctylidene)-1-methyloctylamine 213979-94-3P, N-(1-Ethylheptylidene)-1-ethylheptylamine 213979-95-4P, N-(1-Butylpentylidene)-1-butylpentylamine 654065-57-3P 839716-19-7P, N-(Cyclohexylidene)(4-tert-butylcyclohexyl)amine 839716-20-0P 839716-21-1P 839716-22-2P 839716-23-3P 839716-24-4P 839716-26-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(reductive amination of some carbonyl compds. catalyzed by platinum

metals)

L28 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:386170 HCAPLUS
DN 137:294520
ED Entered STN: 23 May 2002
TI A scrutiny on the reductive amination of carbonyl compounds catalyzed by homogeneous Rh(I) diphosphane complexes
AU Tararov, Vitali I.; Kadyrov, Renat; Riermeier, Thomas H.; Borner, Armin
CS Institut fur Organische Katalyseforschung an der Universitat Rostock e.V., Rostock, 18055, Germany
SO Advanced Synthesis & Catalysis (2002), 344(2), 200-208
CODEN: ASCAF7; ISSN: 1615-4150
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 22
OS CASREACT 137:294520
AB The reductive amination of a series of aldehydes with secondary amines and H2 in the presence of a homogeneous Rh-diphosphane catalyst was studied in order to establish a general mechanism of this reaction and to identify conditions for the improvement of the amine/alc. ratio in the product. Catalysts used in this study included [1,4-butanediylbis[diphenylphosphine-.kappa.P]][(1,2,5,6-.eta.)-1,5-cyclooctadiene]rhodium(1+) tetrafluoroborate(1-) [[Rh(dppb)(COD)]+] and [1,4-butanediylbis[diphenylphosphine]-P,P']bis(methanol)rhodium(1+) tetrafluoroborate(1-). Several possible intermediates as constituents of changing equilibrium like half-aminals, N,O-acetals and aminals were observed in the reaction mixture by means of 1H NMR spectroscopy. In individual trials, these compds. could be successfully hydrogenated under the conditions applied for reductive amination (50 bar H2 pressure, MeOH). Some evidence is accumulated that half-aminals and N,O-acetals might be key intermediates of the reductive amination. Moreover, it was found that the formation of the undesired product alc. is likely based on the reduction of the starting carbonyl compound However, due to numerous equilibrium consisting of several intermediates, general conclusions are hard to be drawn. Proof will be given that, in several cases, the efficiency of the reductive amination of aliphatic aldehydes can be significantly improved by prehydrogenation of the cationic [Rh(dppb)(COD)]+ complex.
ST reductive amination secondary amine rhodium; amination homogeneous catalysis rhodium phosphane redn
IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alicyclic; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aliphatic; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Aldehydes, preparation
Amines, preparation
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(aminals; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Alicyclic compounds
RL: RCT (Reactant); RACT (Reactant or reagent)
(amines; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aromatic; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)

IT Substituent effects
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Acetals
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Amines, reactions
Carbonyl compounds (organic), reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Amination
(reductive, kinetics; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT Amination
Amination catalysts
(reductive; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**secondary**; reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT 100-51-6P, Benzenemethanol, preparation 2238-12-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 79255-71-3, [1,4-Butanediylbis[diphenylphosphine-.kappa.P]][(1,2,5,6-.eta.)-1,5-cyclooctadiene]rhodium(1+) tetrafluoroborate(1-) 83288-25-9, [1,4-Butanediylbis[diphenylphosphine]-P,P']bis(methanol)rhodium(1+) tetrafluoroborate(1-)
RL: CAT (Catalyst use); USES (Uses)
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT 93-53-8, .alpha.-Methylbenzeneacetaldehyde 96-17-3, 2-Methylbutanal 100-52-7, Benzaldehyde, reactions 104-88-1, 4-Chlorobenzaldehyde, reactions 109-05-7, 2-Methylpiperidine 109-89-7, Diethylamine, reactions 110-89-4, Piperidine, reactions 123-08-0, 4-Hydroxybenzaldehyde 123-11-5, 4-Methoxybenzaldehyde, reactions 123-75-1, Pyrrolidine, reactions 124-13-0, Octanal 124-40-3, Dimethylamine, reactions 555-16-8, 4-Nitrobenzaldehyde, reactions 5351-11-1, 1-[(Butoxy)phenylmethyl]piperidine 408529-24-8, .alpha.-Phenyl-1-Piperidinemethanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT 2538-76-3P, 1,1'-(Phenylmethylene)bis[piperidine] 24401-44-3P, 1-(2-Phenyl-1-propenyl)piperidine 468756-62-9P, .alpha.-Phenyl-1-Piperidinemethanol-d 468756-64-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
IT 103-83-3P 772-54-3P 1123-85-9P, .beta.-Methylbenzeneethanol 2905-56-8P, 1-(Phenylmethyl)piperidine 7335-02-6P, 1-Octylpiperidine 29897-82-3P, 1-Benzylpyrrolidine 36794-50-0P, 1-(2-Phenylpropyl)piperidine 46441-11-6P, 1-[(4-Methoxyphenyl)methyl]piperidine 56234-43-6P, 1-(2-Methyl-2-phenylethyl)piperidine 59507-42-5P, 1-[(4-Chlorophenyl)methyl]piperidine 73152-41-7P, 4-(1-Piperidinylmethyl)phenol 170964-17-7P, 1-(2-Methylbutyl)piperidine
RL: SPN (Synthetic preparation); PREP (Preparation)
(reductive amination of carbonyl compds. catalyzed by homogeneous rhodium diphosphane complexes)
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L28 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:314433 HCAPLUS
DN 136:325238
ED Entered STN: 26 Apr 2002
TI Continuous cyanoalkylation process for the conversion of ammonia and primary amines with carbonyl compounds and **hydrogen** cyanide
IN Greindl, Thomas; Braun, Gerold; Wirsing, Friedrich; Krug, Georg
PA Basf Aktiengesellschaft, Germany
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C07C253-00
CC 23-19 (Aliphatic Compounds)
Section cross-reference(s): 45
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1199302	A2	20020424	EP 2001-124231	20011015
	EP 1199302	A3	20030108		
	EP 1199302	B1	20040901		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	DE 10051196	A1	20020508	DE 2000-10051196	20001016
	US 2002087024	A1	20020704	US 2001-970937	20011005
	US 2003114700	A1	20030619	US 2002-236904	20020909
	US 6861548	B2	20050301		
PRAI	DE 2000-10051196	A	20001016		
	US 2001-970937	B1	20011005		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1199302	ICM	C07C253-00

EP 1199302 ECLA C07C253/00
DE 10051196 ECLA C07C253/00
US 2002087024 ECLA C07C253/00
US 2003114700 ECLA C07C253/00

OS CASREACT 136:325238; MARPAT 136:325238

AB Ammonia or organic compds. having .gtoreq.1 NH function are subjected to a cyanoalkylation by the reaction of the NH group-containing compound with a carbonyl compound (e.g., formaldehyde) and with a mole per unreacted NH function of HCN in 2 steps to produce cyanoalkylated amines [e.g., bis(cyanomethyl)amine]. In the first step, the reaction is conducted at less than 1/2 of the reaction mixture b.p. up to a conversion of .gtoreq.60%; and in the second step the reaction is conducted at under half of 150.degree. to .gtoreq.90% conversion (based on HCN).

ST cyanoalkylation amine prepn cyanoalkylamine; biscyanomethylamine prepn cyanomethylation ammonia

IT Aldehydes, reactions
Amines, reactions
Carbonyl compounds (organic), reactions
Ketones, reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(continuous cyanoalkylation process for the conversion of ammonia and **primary** amines)

IT Amides, preparation
Carboxylic acids, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(continuous cyanoalkylation process for the conversion of ammonia and primary amines in the preparation of)

IT Hydrolysis
Saponification
(continuous cyanoalkylation process for the conversion of ammonia and primary amines with intermediate subjected to)

IT Alkylation
(cyanoalkylation; continuous cyanoalkylation process for the conversion of ammonia and primary amines)

IT Methylation
(cyanomethylation; continuous cyanoalkylation process for the conversion of ammonia and primary amines)

IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**primary**; continuous cyanoalkylation process for the conversion of ammonia and **primary** amines)

IT 420-04-2P, Cyanoamine
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(continuous cyanoalkylation process for the conversion of ammonia and primary amines for preparation of)

IT 124-09-4, Hexamethylene diamine, uses
RL: NUU (Other use, unclassified); USES (Uses)
(continuous cyanoalkylation process for the conversion of ammonia and primary amines with carbonyl compds. and **hydrogen** cyanide)

IT 50-00-0, Formaldehyde, reactions 74-89-5, Methylamine, reactions 74-90-8, **Hydrogen** cyanide, reactions 75-07-0, Acetaldehyde, reactions 123-38-6, Propionaldehyde, reactions 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(continuous cyanoalkylation process for the conversion of ammonia and primary amines with carbonyl compds. and **hydrogen** cyanide)

IT 628-87-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(continuous cyanoalkylation process for the conversion of ammonia and primary amines with carbonyl compds. and **hydrogen** cyanide)

IT 5616-32-0P 7327-60-8P 185257-07-2P
RL: SPN (Synthetic preparation); PREP (Preparation)

(continuous cyanoalkylation process for the conversion of ammonia and primary amines with carbonyl compds. and **hydrogen** cyanide)

L28 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:761802 HCAPLUS
DN 123:144506
ED Entered STN: 29 Aug 1995
TI Reductive amination process and ruthenium catalysts for the preparation of aminoalcohols from hydroxycarbonyl compounds
IN Weyer, Hans-Juergen; Mercker, Hans Jochen; Becker, Rainer
PA BASF A.-G., Germany
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C07C217-04
ICS C07C217-28; C07C215-10; C07C213-02
ICA B01J023-46; C07C047-19; C07C049-17; C07D325-00; C07H003-00
CC 33-7 (Carbohydrates)
Section cross-reference(s): 23, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4400591	A1	19950713	DE 1994-4400591	19940112
	EP 663389	A1	19950719	EP 1994-120495	19941223
	R: BE, DE, FR, GB				
PRAI	DE 1994-4400591	A	19940112		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 4400591	ICM	C07C217-04
	ICS	C07C217-28; C07C215-10; C07C213-02
	ICA	B01J023-46; C07C047-19; C07C049-17; C07D325-00; C07H003-00
EP 663389	ECLA	B01J023/46B; C07C213/02

OS CASREACT 123:144506; MARPAT 123:144506
AB Aminoalcs. (e.g., N-methylglucamine; 96% yield) are prepared in high yield by the reductive amination of a hydroxycarbonyl compound (e.g., glucose) with an primary (e.g., **H2NMe**) or secondary amine or NH3 with **H2** at 0-300.degree./1-400 bar in the presence of a catalyst containing 50-100% of its mass in the form of Ru (e.g., Ru/C).
ST methylglucamine; glucose reductive amination prepn methylglucamine; hydroxycarbonyl compd reductive amination prepn aminoalc; catalyst reductive amination ruthenium prepn aminoalc
IT Carbohydrates and Sugars, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(glycoaldehydes; reductive amination into aminoalcs. in presence of Ru catalysts)
IT Charcoal
RL: CAT (Catalyst use); USES (Uses)
(reductive amination catalysts for conversion of hydroxycarbonyl compds. into aminoalcs.)
IT Monosaccharides
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination into aminoalcs. in presence of Ru catalysts)
IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of hydroxycarbonyl compds. with)
IT Alcohols, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(amino, reductive amination process and ruthenium catalysts for the preparation from hydroxycarbonyl compds. of)
IT Oligosaccharides
RL: RCT (Reactant); RACT (Reactant or reagent)

(di-, reductive amination into aminoalcs. in presence of Ru catalysts)
IT **Carbonyl compounds**, reactions
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(hydroxy, reductive amination into aminoalcs. in presence of Ru catalysts)
IT Amination
(reductive, of hydroxycarbonyl compds. into aminoalcs.)
IT Amination catalysts
(reductive, ruthenium for conversion of hydroxycarbonyl compds. into aminoalcs.)
IT **Amines**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**secondary**, reductive amination of hydroxycarbonyl compds. with)
IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7440-18-8, Ruthenium, uses 12036-10-1, Ruthenium dioxide
RL: CAT (Catalyst use); USES (Uses)
(reductive amination catalysts for conversion of hydroxycarbonyl compds. into aminoalcs.)
IT 50-99-7, Glucose, reactions 5077-67-8, 1-Hydroxy-2-butanone 9005-25-8, Starch, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination into aminoalcs. in presence of Ru catalysts)
IT 74-89-5, Methylamine, reactions 124-40-3, Dimethylamine, reactions 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reductive amination of hydroxycarbonyl compds. with)
IT 50-70-4P, Sorbitol, preparation
RL: BYP (Byproduct); PREP (Preparation)
(reductive amination process and ruthenium catalysts for the preparation from hydroxycarbonyl compds. of)
IT 6284-40-8P, N-Methylglucamine 76326-99-3P, N,N-Dimethylglucamine
RL: SPN (Synthetic preparation); PREP (Preparation)
(reductive amination process and ruthenium catalysts for the preparation from hydroxycarbonyl compds. of)

=> b wpix
FILE 'WPIX' ENTERED AT 15:07:25 ON 11 MAR 2005
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FILE LAST UPDATED: 8 MAR 2005 <20050308/UP>
MOST RECENT DERWENT UPDATE: 200516 <200516/DW>
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=> d all l45 tot

L45 ANSWER 1 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-224436 [21] WPIX
CR 2004-167955 [16]
DNC C2004-088594
TI Production of secondary amine product comprises heating mixture comprising **hydrogen**, carbonyl compound and primary amine reactant in presence of catalyst comprising metallic palladium.
DC A25 E19 J04
IN **NELLI, C H**; **SU, W**
PA (HUNT-N) HUNTSMAN PETROCHEMICAL CORP
CYC 1
PI US 2004019238 A1 20040129 (200421)* 7 C07C002-00
ADT US 2004019238 A1 CIP of US 2002-200361 20020722, US 2003-623293 20030718
PRAI US 2003-623293 20030718; US 2002-200361 20020722
IC ICM C07C002-00
AB US2004019238 A UPAB: 20040326
NOVELTY - Producing a secondary amine product comprises heating a mixture comprising **hydrogen**, a carbonyl compound and a primary amine reactant to 80-230 deg. C and under 100-3000 psig in the presence of a catalyst comprising metallic palladium.
DETAILED DESCRIPTION - Producing a secondary amine product comprises heating a mixture comprising **hydrogen**, a carbonyl compound of formula R'-C(=O)-R and a primary amine reactant of formula R-NH2 to 80-230 deg. C and under 100-3000 psig in the presence of a catalyst comprising metallic palladium. The secondary amine has the formula RNH-CH(R')(R).
R = alkyl, aminoalkyl, alkylaryl, or aminoalkyl;
R', R = H or 1-20C alkyl, provided that both R' and R are not simultaneously H.
The amount of tertiary amine produced during the process is less than 3.00 weight% of the total amount of secondary amine produced.
An INDEPENDENT CLAIM is also included for a process for producing a secondary amine product from a primary amine reactant.
USE - For producing a secondary amine product, preferably N,N'-diisopropylisophorone diamine (claimed) that may be used as catalysts for the production of polyurethanes and polyureas.
ADVANTAGE - The process of the invention has high conversion rates and high selectivities, both greater than 95% on a first pass through the reactor.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A02-A10; E10-B01E; E10-B04C2; E11-F07A; J04-E04; N02-F01; N07-D08A

L45 ANSWER 2 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-167955 [16] WPIX
CR 2004-224436 [21]
DNC C2004-066624
TI Production of secondary amine, e.g. 2-alkyl substituted amine, involves reacting mixture of **hydrogen**, primary amine, and carbonyl compound using palladium catalyst.
DC E19 J04
IN **NELLI, C H**; **SU, W**
PA (HUNT-N) HUNTSMAN PETROCHEMICAL CORP
CYC 103
PI US 2004015016 A1 20040122 (200416)* 4 C07C002-00
WO 2004009529 A1 20040129 (200416) EN C07C209-26
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL
PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA
ZM ZW
AU 2003249326 A1 20040209 (200450) C07C209-26
ADT US 2004015016 A1 US 2002-200361 20020722; WO 2004009529 A1 WO 2003-US22666 20030721; AU 2003249326 A1 AU 2003-249326 20030721
FDT AU 2003249326 A1 Based on WO 2004009529
PRAI US 2002-200361 20020722
IC ICM C07C002-00; C07C209-26
AB US2004015016 A UPAB: 20040805
NOVELTY - A secondary amine is produced from a primary amine by reacting a mixture comprising **hydrogen**, primary amine, and carbonyl compound, under 100-3000 psig at 80-200 deg. C in the presence of a catalyst comprising metallic palladium and having a surface area of at least 50 m2/g. The amount of tertiary amine impurity produced during the process is less than 3 weight%.
DETAILED DESCRIPTION - A secondary amine is produced from a primary amine according to reaction scheme (I). The process comprises reacting a mixture comprising **hydrogen**, primary amine, and carbonyl compound, under 100-3000 psig at 80-200 deg. C in the presence of a catalyst comprising metallic palladium and having a surface area of at least 50 m2/g. The amount of tertiary amine impurity produced during the process is less than 3 weight%.
R = alkyl or alkylaryl;
R', R'' = H or 1-20C alkyl.
R' and R'' are not simultaneously **hydrogen**, where tertiary amine by-product is minimized.
USE - For preparing 2-alkyl substituted amines from primary amines.
ADVANTAGE - The method selectively produces secondary amines in high yield.
Dwg.0/0
FS CPI
FA AB; GI; DCN
MC CPI: E10-B01A; E10-B01E; E10-B04A1; E10-B04C2; J04-E01

=> d all l46 tot

L46 ANSWER 1 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2003-150914 [15] WPIX
DNC C2003-039291
TI Manufacture of catalyst for hydrogenation of hydrocarbon oil, involves impregnating solution containing VI group metallic salt on oxide carrier and impregnating solution containing VIII group metallic salt on carrier.
DC A97 E19 H04
PA (MAZN) COSMO OIL CO LTD
CYC 1
PI JP 2002239385 A 20020827 (200315)* 9 B01J023-88
ADT JP 2002239385 A JP 2001-37927 20010215
PRAI JP 2001-37927 20010215
IC ICM B01J023-88
ICS B01J029-16; B01J037-02; C10G045-08
AB JP2002239385 A UPAB: 20030303
NOVELTY - A solution containing a VI group metallic salt is impregnated on a complex oxide carrier comprising alumina, and zeolite, boria, silica and/or zirconia, and dried. A solution containing a VIII group metallic salt and an organic compound having hydroxyl group, ether bond, carboxyl group and/or amino group, is impregnated on the carrier and dried. Hydrocarbon oil desulfurization catalyst is obtained.
DETAILED DESCRIPTION - A solution containing a VI group metallic salt (10-30 weight% (weight%) based on catalyst reference standard and conversion) is impregnated on a complex oxide carrier containing alumina (80-99.5 mass%) and zeolite, boria, silica and/or zirconia (0.5-20 mass%), and dried. A solution containing a VIII group metallic salt (1-15 weight% based

on catalyst reference standard and conversion) and an organic compound having hydroxyl group, ether bond, carboxyl group and/or amino group, is impregnated on the carrier and dried. Hydrocarbon oil desulfurization catalyst is obtained.

An INDEPENDENT CLAIM is included for hydrogenation of hydrocarbon oil which involves hydrogenating light-oil fraction containing sulfur at **hydrogen** partial pressure of 3-8 MPa, at a temperature of 300-420 deg. C and liquid-space velocity of 0.3-5 hour-1 in presence of the catalyst.

USE - Used in hydrogenation of hydrocarbon oil (claimed).

ADVANTAGE - Since the catalyst has high desulfurization activity, the catalyst effectively reduces the sulfur content in the light oil. The hydrogenation of the light oil is performed without reconstructing the existing device used for carrying out the hydrogenation. By using the catalyst, the light oil with low sulfur content is obtained easily.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: A12-W11K; E05-L; E05-L02B; E05-L02C; E05-M; E05-N; E10-B01B; E10-B02B; E10-B04; E10-C02; E10-C04; E10-E04H; E10-E04J; E10-E04M; E10-H01; **E11-D**; E35; E35-Q; E35-V; E35-W; **H04-E08** ; **H04-F02E**; N02; N02-B; N02-C; N03; N03-C01; N03-C02; N03-D02; N05-D; N05-E; N06-E01; N07-B

L46 ANSWER 2 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2002-667125 [71] WPIX

DNC C2002-187424

TI Hydroformylation of olefins, to aldehyde mixtures used for producing carboxylic acids, alcohols, amines or aldol condensation products, comprises 4,5-bis-(10-phenoxa-phosphino)-xanthene as ligand in second stage.

DC E19 H04 J04

IN BOHNEN, H; HERWIG, J

PA (CELA) CELANESE CHEM EURO GMBH

CYC 22

PI WO 2002068371 A1 20020906 (200271)* GE 44 C07C045-50 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: JP US ZA
DE 10108475 A1 20020912 (200271) C07C045-50 <--

ADT WO 2002068371 A1 WO 2002-EP1379 20020209; DE 10108475 A1 DE 2001-10108475 20010222

PRAI DE 2001-10108475 20010222

IC ICM **C07C045-50**
ICS B01J031-24; C07C029-14; C07C031-125; **C07C047-02**; C07C051-235; C07C053-126; C07C067-08; C07C069-80; C07C209-24; C07F015-00

AB WO 200268371 A UPAB: 20021105
NOVELTY - In hydroformylation of olefinically unsaturated compounds (I), in which tail gas (II) is formed in a first reaction stage in a homogeneous system using organic phosphorus(III)-rhodium (Rh) complex compounds as catalyst. (II) is passed to second reaction stage, in which it is reacted with (I) in presence of Rh complex compounds and diphosphines of the 4,5-bis-(10-phenoxa-phosphino)-xanthene type.

DETAILED DESCRIPTION - In hydroformylation of olefinically unsaturated compounds (I), a first reaction stage is carried out in a homogeneous system using organic phosphorus (P-III) rhodium (Rh) complex compounds as catalyst at 0.2-20.0 MPa and tail gas (II) is formed.

(II) is passed to a second reaction stage, in which the (I) present in (II) are reacted at 0.2-20 MPa in a homogeneous reaction system in the presence of Rh complex compounds and diphosphines of formula (III).

R1, R2 = 1-18C alkyl, 6-14 C aryl, 7-24 C aralkyl or 7-24 C alkylaryl;

R3 = H or -CHRaRb;

Ra, Rb = H, 1-18 C alkyl, 1-8 C alkoxy or 6-14 C aryl or 7-24 C

aralkyl groups, optionally substituted by 1-10 C alkyl and/or 1-10 C alkoxy; and

R4 = 1-10 C alkyl, 6-14 C aryl, 7-24 C aralkyl or 7-24 C alkylaryl.

USE - The aldehyde mixtures obtained by hydroformylation, after separation and purification, are used for producing the following:

(1) carboxylic acids by oxidation;

(2) alcohols by reduction or hydrogenation;

(3) amines by amination with ammonia or a primary or secondary amine in the presence of an amination catalyst and **hydrogen**; and

(4) aldehydes from hydroformylation of mixtures containing but-1-ene and but-2-ene, after aldol condensation to aldol mixtures, are used for producing the following:

(i) mixtures of isomeric decyl alcohols by hydrogenation;

(ii) didecyl phthalate by reacting the decyl alcohols with phthalic acid or anhydride; and

(iii) isomeric decancarboxylic acids by partial hydrogenation to isomeric decanals, then oxidation (all claimed).

ADVANTAGE - In hydroformylation of mixtures, ligands giving high conversion of internal olefins with high selectivity to the preferred linear aldehydes are used in stage (2). However, the diphosphites normally used are sensitive to hydrolysis and form phosphonic acids that can damage the rhodium complex catalyst. Diphosphines (III), which are very stable, give high selectivity to linear carbonyl compounds under economically-acceptable process conditions and extend the catalyst life.

Dwg.0/0

FS CPI

FA AB; GI; DCN

MC CPI: E05-G01; E10-B04C; E10-C04K; E10-D01C; E10-E04E; **E11-F02**; **H04-E**; **H04-F01**; **H04-F02E**; J04-E04; N02-E02; N05-D; N05-E01; N07-D02A

L46 ANSWER 3 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2002-643569 [69] WPIX

DNC C2002-181888

TI Hydroformylation of olefin to give aldehyde and derivatives, e.g. decyl alcohols from butene mixtures involves reaction with carbon monoxide and **hydrogen** in presence of special rhodium-diphosphine complex.

DC E19 H04 J04

IN BOHNEN, H; HERWIG, J

PA (CELA) CELANESE CHEM EURO GMBH

CYC 22

PI WO 2002068369 A1 20020906 (200269)* GE 34 C07C045-50 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: JP US ZA
DE 10108476 A1 20020912 (200269) C07C045-50 <--

ADT WO 2002068369 A1 WO 2002-EP1377 20020209; DE 10108476 A1 DE 2001-10108476 20010222

PRAI DE 2001-10108476 20010222

IC ICM **C07C045-50**
ICS B01J031-24; C07C029-14; C07C031-125; **C07C047-02**; C07C051-235; C07C053-126; C07C067-08; C07C069-80; C07F015-00

AB WO 200268369 A UPAB: 20021026

NOVELTY - 9,9-Di-substituted 4,5-bis-(10-phenoxaphosphino)-xanthene compounds (I) are used as diphosphine ligands for rhodium complexes used as catalysts in the hydroformylation of olefins at 50-160 deg. C and 0.2-20 MPa.

DETAILED DESCRIPTION - A method for the hydroformylation of olefinically unsaturated compounds with carbon monoxide and **hydrogen** at 50-160 deg. C and 0.2-20 MPa in presence of complexes of rhodium and diphosphine compounds of formula (I).

R1, R2 = 1-18C alkyl, 6-14C aryl, 7-24C aralkyl or 7-24C alkaryl;

R3 = H or -C(Ra)HRb;

Ra, Rb = H, 1-18C alkyl or alkoxy, 6-14C aryl (optionally substituted with 1-10C alkyl or alkoxy) or 7-24C aralkyl;

R4 = 1-10C alkyl, 6-14C aryl, 7-24C aralkyl or 7-24C alkaryl.
INDEPENDENT CLAIMS are also included for:
(a) methods for the production of carboxylic acids, alcohols or amines by hydroformylation of olefins to aldehydes followed by oxidation to acid, reduction or hydrogenation to alcohol, or amination with ammonia, prim. or sec. amine in presence of **hydrogen** and a catalyst;
(b) a method for the production of mixtures of isomeric decyl alcohols from mixtures containing butene-1 and butene-2, by hydroformylation as above followed by condensation of the resulting aldehyde mixture, separation of the aldol mixture and hydrogenation to the alcohols;
(c) a method for the production of didecyl phthalate by process (b) followed by esterification of the decyl alcohol mixture with phthalic acid or anhydride;
(d) a method for the production of mixtures of isomeric decanoic acids from the aldol mixture produced in (b), by partial hydrogenation to isomeric decanals followed by oxidation to the acids; and
(e) hydroformylation catalysts containing rhodium and (I).
USE - For the hydroformylation of olefins to aldehydes, followed by conversion into alcohols, carboxylic acids, esters and amines, especially e.g. decyl alcohols, decanoic acids and didecyl phthalate plasticizers.
ADVANTAGE - Enables the hydroformylation of olefins under economically viable conditions to give linear aldehydes with high levels of conversion and high selectivity, even when using olefins with internal double bonds. The method uses soluble diphosphine catalysts which show a long service life without significant loss of activity over many cycles.
Dwg.0/0

FS CPI
FA AB; GI; DCN
MC CPI: E05-G01; E06-A03; E10-B04C; E10-C04K; E10-D01C; E10-E04E; E10-G02A1; **E11-F02**; **H04-A07**; **H04-F02A**; J04-E04; N02-E02; N05-D; N05-E01; N07-D02A

L46 ANSWER 4 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 1990-231149 [30] WPIX
DNC C1990-099763
TI New beryllium, aluminium, phosphorus oxide molecular sieves - have three-dimensional microporous framework structures with tetrahedral oxide units.
DC E12 H04 J01 J04
IN FLANIGEN, E M; LOK, B M; PATTON, R L; WILSON, S T
PA (UNVO) UOP
CYC 1
PI US 4940570 A 19900710 (199030)*
ADT US 4940570 A US 1986-835293 19860303
PRAI US 1984-599776 19840413; US 1986-835293 19860303
IC C01B025-36
AB US 4940570 A UPAB: 19930928
Sieves (I) have framework structures of BeO2, AlO2 and PO2 tetrahedral units and have compsn. (anhydrous basis) mR2(Be(x)Al(y)P(z))O2 where R is an organic template, m its number of moles present and is 0-0.3; x, y, z are the mole fractions of Be, Al, P present as tetrahedral oxides and their values are defined by a ternary diagram. Sieves may be obtd. hydrothermally from gels of reactive sources of Be, Al and P plus a template. Suitable sources are e.g. oxides, hydroxides, halogens and/or sulphates of Be, Al isopropoxide and orthophosphoric acid. Template is pref. a quaternary ammonium or phosphonium cpd. Prods. have characteristic XRD patterns.
USE/ADVANTAGE - (I) are **H2O** sorbents and desiccants leading to their use in drying natural or cracked gas, reformer **H2** streams, O2 or N2 streams etc. (I) are also catalysts for hydrocarbon conversion reactions e.g. cracking, isomerisation, hydrogenation, hydrofining etc. and oxidative combustion reaction. @
3

FS CPI
FA AB
MC CPI: E10-J02D; **E11-D**; E11-E; E11-G; E11-J; E11-Q02; E31-A02;
E31-D01; E31-H03; E31-K01; E31-K07; **H02-B01**;
H04-F02; J01-D01; J01-E03C; J04-E04; N01; N04-B; N06-B; N06-E

L46 ANSWER 5 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 1988-112453 [16] WPIX
DNC C1988-050407
TI Crystalline gallium alumino-phospho-silicate - for molecular sieves, useful as adsorbents and catalysts.
DC E32 H04 J01 J04
IN FLANIGEN, E M; LOK, B M T; PATTON, R L; WILSON, S T
PA (UNIC) UNION CARBIDE CORP
CYC 1
PI US 4735806 A 19880405 (198816)* 31
ADT US 4735806 A US 1986-845985 19860331
PRAI US 1984-599925 19840413; US 1986-845985 19860331
IC B01J027-18; C01B025-26
AB US 4735806 A UPAB: 19930923
Crystalline Ga aluminophosphosilicates of formula mR:(Ga(w)Al(x)P(y)Si(z))O(2) (I) is new, (where R = at least one organic templating agent; m = 0-0.3; w,x,y and z are mole fractions falling within the pentagonal area defined by the following points in the ternary diagram: (A)x = 0.60, y = 0.38, z+w = 0.02; (B) x = 0.38, y = 0.60, z+w = 0.02; (C) x = 0.01, y = 0.60, z+w = 0.39; (D) x = 0.01, y = 0.01, z+w = 0.98; (E) x = 0.60, y = 0.01, z+w = 0.39).
USE - (I) are molecular sieves useful as (a) adsorbents, e.g. for drying natural gas, cracked gas, **H2**, O2, N2 or air, and (b) catalyst, or catalyst bases, e.g. for combustion or hydrocarbon conversions e.g. cracking, hydrocracking, isomerisation, reforming, hydrotreating, alkylation, dealkylation, polymerisation, hydrogenation or dehydrogenation.
0/3
FS CPI
FA AB; DCN
MC CPI: **E11-D**; E11-E; E11-G; E11-H; E11-J; E11-Q01; E31-A02;
E31-D01; E31-H03; **H01-F01**; **H02-B01**;
H04-F02; J01-E03C; J04-E04; N06-A

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     FILE 'HCAPLUS' ENTERED AT 13:13:23 ON 11 MAR 2005
L1            2 (US20040019238 OR US US20040015016)/PN

     FILE 'REGISTRY' ENTERED AT 13:14:14 ON 11 MAR 2005

     FILE 'HCAPLUS' ENTERED AT 13:14:16 ON 11 MAR 2005
L2              TRA L1 1- RN :       16 TERMS

     FILE 'REGISTRY' ENTERED AT 13:14:16 ON 11 MAR 2005
L3           16 SEA L2

     FILE 'WPIX' ENTERED AT 13:14:18 ON 11 MAR 2005
L4            1 (US20040019238 OR US US20040015016)/PN

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FILE LAST UPDATED: 10 Mar 2005  (20050310/ED)

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L1   ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:80390  HCAPLUS
DN   140:130121
ED   Entered STN:  01 Feb 2004
TI   Preparation of secondary amines by the catalytic reductive alkylation of
     carbonyl compounds with primary amines
IN   Su, Wei-yang; Nelli, Christopher H.
PA   Huntsman Petrochemical Corporation, USA
SO   U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U.S. Ser. No. 200,361.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  C07C029-26
NCL  564472000; 564473000
CC   45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
     Section cross-reference(s): 23, 67
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
PI   US 2004019238        A1    20040129    US 2003-623293         20030718 <--
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US 2004015016 A1 20040122 US 2002-200361 20020722
PRAI US 2002-200361 A2 20020722
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004019238	ICM	C07C029-26
	NCL	564472000; 564473000

OS CASREACT 140:130121; MARPAT 140:130121

AB A process for the reductive alkylation of primary amines [e.g., 1-amino-3-(dimethylamino)propane] to form secondary amines [e.g., 1-(isopropylamino)-3-(dimethylamino)propane] is described using the high-pressure reaction of the primary amines with a carbonyl compound alkylating agent (e.g., acetone) and hydrogen in the presence of a catalyst which comprises metallic palladium (e.g., Pd/C).

ST secondary amine prepn catalytic reductive alkylation; isopropylaminodimethylaminopropane prepn

IT Charcoal
RL: CAT (Catalyst use); USES (Uses)
(catalyst support; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(diamines; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT Carbonyl compounds (organic), reactions
Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT Alkylation catalysts
(reductive; Pd in the preparation of secondary amines by the reductive alkylation of carbonyl compds. with primary amines)

IT Alkylation
(reductive; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT Amines, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(secondary; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, catalyst support; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst; preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT 67-64-1DP, Acetone, reductive alkylation products with Jeffamines and hydrogen 1333-74-0DP, Hydrogen, reductive alkylation products with Jeffamines and acetone 9046-10-0DP, Jeffamine D-230, reductive alkylation products with acetone and hydrogen 39423-51-3DP, Jeffamine T-403, reductive alkylation products with acetone and hydrogen 63905-13-5P 343595-80-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

IT 67-64-1, Acetone, reactions 78-93-3, MEK, reactions 107-87-9, 2-Pentanone 108-10-1, MIBK 109-55-7, 1-Amino-3-(dimethylamino)propane 110-12-3, Methylisoamyl ketone 123-05-7 591-78-6, 2-Hexanone 1333-74-0, Hydrogen, reactions 2855-13-2, Isophorone diamine

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines by the catalytic reductive alkylation of carbonyl compds. with primary amines)

L1 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:60193 HCAPLUS
DN 140:113242
ED Entered STN: 26 Jan 2004
TI Preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compounds
IN Su, Wei-yaug; Nelli, Christopher H.
PA Huntsman Petrochemical Corporation, USA
SO U.S. Pat. Appl. Publ., 4 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C07C029-26
NCL 564446000; 564472000; 564473000
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 48, 67
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004015016	A1	20040122	US 2002-200361	20020722
	US 2004019238	A1	20040129	US 2003-623293	20030718 <--
	WO 2004009529	A1	20040129	WO 2003-US22666	20030721

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR; BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-200361 A2 20020722
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004015016	ICM	C07C029-26
	NCL	564446000; 564472000; 564473000

OS CASREACT 140:113242; MARPAT 140:113242
AB A process for the reductive alkylation of primary amines (e.g., dimethylaminopropylamine) into secondary amines [e.g., 1-(dimethylamino)-3-(isopropylamino)propane] is described by thew high-pressure reaction of the primary amine with an alkylating agent (e.g., a carbonyl compound such as acetone) and hydrogen in the presence of a catalyst which comprises metallic palladium.
ST dimethylaminopropylamine reductive alkylation acetone manuf dimethylaminoisopropylaminopropane
IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(diamines; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT Carbonyl compounds (organic), reactions
Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)

IT Alkylation catalysts
(reductive, Pd; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT Alkylation
(reductive; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. via)
IT Charcoal
RL: CAT (Catalyst use); USES (Uses)
(support; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, support; preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 63905-13-5P 343595-80-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT 109-55-7, 1-Amino-3-(dimethylamino)propane 2855-13-2, Isophoronediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds.)
IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 67-64-1, Acetone, reactions 78-93-3, MEK, reactions 107-87-9, 2-Pentanone 108-10-1, MIBK 110-12-3, Methyl isoamyl ketone 123-05-7 591-78-6, 2-Hexanone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)
IT 1333-74-0, Hydrogen, reactions
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)
(preparation of secondary amines via the catalytic alkylation of primary amines with carbonyl compds. using)

=> b reg
FILE 'REGISTRY' ENTERED AT 13:15:02 ON 11 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1
DICTIONARY FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

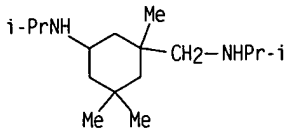
Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l3 tot

L3 ANSWER 1 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **343595-80-2** REGISTRY
CN Cyclohexanemethanamine, 1,3,3-trimethyl-N-(1-methylethyl)-5-[(1-methylethyl)amino]- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Jefflink 754
FS 3D CONCORD
MF C16 H34 N2
CI COM
SR Reaction Database
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: PREP (Preparation); PRP (Properties); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

16 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
16 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **63905-13-5** REGISTRY
CN 1,3-Propanediamine, N,N-dimethyl-N'-(1-methylethyl)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN N'-Isopropyl-N,N-dimethyl-1,3-propanediamine
FS 3D CONCORD
MF C8 H20 N2
LC STN Files: CA, CAPLUS, CASREACT, CHEMLIST, RTECS*, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)

Me2N—(CH2)3—NHPr-i

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 3 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **39423-51-3** REGISTRY
CN Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-(2-aminomethylethoxy)-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Huntsman T 403
CN Jeffamine T 304

CN Jeffamine T 403
CN Jeffamine T 703
CN T 403
DR 168569-33-3, 58329-86-5, 125086-34-2, 98084-94-7, 155833-32-2, 87993-80-4
MF (C3 H6 O)n (C3 H6 O)n (C3 H6 O)n C15 H35 N3 O3
CI IDS, PMS, COM
PCT Polyether
LC STN Files: CA, CAPLUS, CHEMCATS, CHEMLIST, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, TOXCENTER, USPAT2, USPATFULL
Other Sources: DSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
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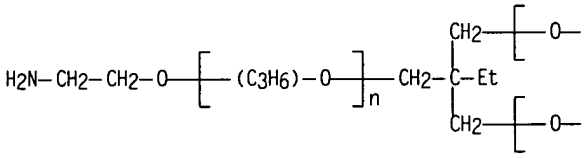
PAGE 1-A



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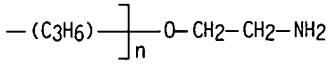
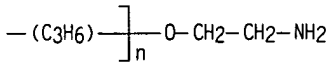
PAGE 1-B





316 REFERENCES IN FILE CA (1907 TO DATE)
125 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
316 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 4 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **9046-10-0** REGISTRY
CN Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN .alpha.,.omega.-Diaminopolypropylene glycol
CN Ablebond 342-1 Hardener
CN D 2000
CN D 230
CN D 400
CN DA 200
CN DA 200 (amine)

CN DA 500
CN DA 500 (polyoxyalkylene)
CN Diaminopolypropylene glycol
CN Jeffamine 2000
CN Jeffamine 400
CN Jeffamine D 1000
CN Jeffamine D 150
CN Jeffamine D 200
CN Jeffamine D 2000
CN Jeffamine D 230
CN Jeffamine D 300
CN Jeffamine D 3000
CN Jeffamine D 400
CN Jeffamine D 4000
CN Jeffamine D 500
CN Jeffamine D 600
CN Jeffamine D 800
CN Jeffamine TA 345
CN MG 420
CN PC Amine DA 2000
CN Poly(oxypropylene)diamine
CN Poly(propylene oxide) bis(2-aminopropyl ether)
CN Polypropylene glycol bis(aminopropyl) ether
CN POPDA
CN TS 64
CN XNH 3351
CN XTJ 510
AR 26403-64-5, 26403-65-6
DR 9057-16-3, 9064-12-4, 168569-34-4, 122896-82-6, 125956-81-2, 125956-82-3, 124364-29-0, 51160-96-4, 111775-27-0, 74434-34-7, 53124-95-1, 157766-64-8
MF (C3 H6 O)n C6 H16 N2 O
CI IDS, PMS, COM
PCT Polyether
LC STN Files: BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, PIRA, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
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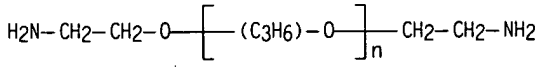

2 (D1-Me)

1105 REFERENCES IN FILE CA (1907 TO DATE)

Search done by Noble Jarrell

524 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1106 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 5 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **7440-44-0** REGISTRY
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 1262R97
CN 207A
CN 207A (carbon)
CN 207E3
CN 20SPD
CN 2C98
CN 3GX
CN 4GCX
CN 4GM
CN 606R97
CN AC 01
CN AC 01 (adsorbent)
CN AC 100
CN AC 100 (adsorbent)
CN AC 40
CN AC 40 (adsorbent)
CN Acticarbon 25K
CN Acticarbon ENO
CN Acticarbon TK
CN Actitex CS 1501
CN Activated carbon
CN Active carbon beads
CN AG 2
CN AG 2 (catalyst support)
CN AG 2-4
CN AG 3
CN AG 3 (adsorbent)
CN AG 5
CN AG 5 (adsorbent)
CN AG 95
CN AG 95 (carbon)
CN AG-M
CN AG-M (carbon)
CN AG-OV 1
CN AGN 1
CN AGN 1 (carbon)
CN AGN 2
CN AGN 2 (carbon)
CN AGN 3
CN AGS 3
CN AGS 4
CN AGS 4 (adsorbent)
CN AK
CN AK (adsorbent)
CN Amoco PX 21
CN Anthrasorb
CN APB 10C
CN AR 2
CN AR 2 (carbon)
CN AR 3
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 798556-12-4, 798556-14-6, 12789-22-9, 130960-03-1, 67167-41-3, 114680-00-1, 37196-29-5, 137322-21-5, 76416-61-0, 82600-58-6, 83138-28-7, 26837-67-2, 39422-04-3, 39434-34-9, 116788-82-0, 208519-32-8, 208728-20-5
MF C
CI COM

SR CA
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
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RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

292983 REFERENCES IN FILE CA (1907 TO DATE)
12925 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
293188 REFERENCES IN FILE CAPLUS (1907 TO DATE)
18 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 6 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **7440-05-3** REGISTRY
CN Palladium (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN E 1010/W
CN MPP 030
CN MPP 050
CN MPP 080
CN P 50
CN P 50 (metal)
CN Palladex 600
CN Palladium black
CN Palladium element
CN SFP 1001P
MF Pd
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,

MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
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Pd

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

85400 REFERENCES IN FILE CA (1907 TO DATE)
6217 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
85450 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 7 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **2855-13-2** REGISTRY
CN Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Cyclohexanemethylamine, 5-amino-1,3,3-trimethyl- (7CI, 8CI)
OTHER NAMES:
CN 1,3,3-Trimethyl-1-aminomethyl-5-aminocyclohexane
CN 1-Amino-3,3,5-trimethyl-5-aminomethylcyclohexane
CN 1-Amino-3-(aminomethyl)-3,5,5-trimethylcyclohexane
CN 3,3,5-Trimethyl-5-aminomethylcyclohexylamine
CN 3-Aminomethyl-3,5,5-trimethylcyclohexylamine
CN 5-Amino-1,3,3-trimethylcyclohexanemethanamine
CN 5-Amino-1,3,3-trimethylcyclohexanemethylamine
CN Araldite HY 5083
CN Chemammina CA 17
CN Epilox H 10-31
CN IPD
CN IPDA
CN Isophorone diamine
CN Luxam IPD
CN Polypox IPD
CN Rutadur SG
CN Vestamin IPD
FS 3D CONCORD
DR 177646-11-6, 129050-51-7, 25495-81-2, 50858-71-4, 52004-55-4, 45981-71-3, 52697-24-2, 116723-72-9

MF C10 H22 N2
CI COM
LC STN Files: ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent; Report
RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
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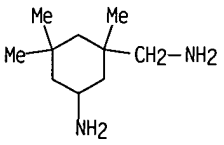

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1313 REFERENCES IN FILE CAPLUS (1907 TO DATE)
8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 8 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **1333-74-0** REGISTRY
CN Hydrogen (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Dihydrogen
CN Hydrogen (H2)
CN Hydrogen molecule
CN Mol. hydrogen
CN Molecular hydrogen
CN Orthohydrogen
CN Parahydrogen
CN Protium
DR 725200-57-7
MF H2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

H-H

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

296023 REFERENCES IN FILE CA (1907 TO DATE)
3624 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
296159 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 9 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **591-78-6** REGISTRY
CN 2-Hexanone (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2-Oxohexane
CN Butyl methyl ketone
CN MBK
CN Methyl butyl ketone
CN Methyl n-butyl ketone
CN n-Butyl methyl ketone
FS 3D CONCORD
MF C6 H12 O
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

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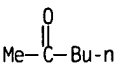
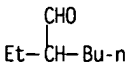


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3477 REFERENCES IN FILE CA (1907 TO DATE)
23 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3480 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

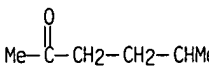
L3 ANSWER 10 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **123-05-7** REGISTRY
CN Hexanal, 2-ethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Caproaldehyde, .alpha.-ethyl- (3CI)
OTHER NAMES:
CN (.+-.)-2-Ethylhexanal
CN .alpha.-Ethylcaproaldehyde
CN .alpha.-Ethylhexanal
CN 2-Ethylcaproaldehyde
CN 2-Ethylhexaldehyde
CN 2-Ethylhexanal
CN 2-Ethylhexylaldehyde
CN 3-Formylheptane
CN Butylethylacetaldehyde
CN Ethylbutylacetaldehyde
CN NSC 42871
FS 3D CONCORD
DR 58712-00-8
MF C8 H16 O
CI COM
LC STN Files: ANABSTR, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CSCHEM, CSNB, DETHERM*, DIPPR*, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent; Report
RL.P Roles from patents: BIOL (Biological study); CMBI (Combinatorial study); MSC (Miscellaneous); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: PRP (Properties)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

901 REFERENCES IN FILE CA (1907 TO DATE)
46 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
901 REFERENCES IN FILE CAPLUS (1907 TO DATE)
37 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 11 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **110-12-3** REGISTRY
CN 2-Hexanone, 5-methyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2-Methyl-5-hexanone
CN 3-Methylbutyl methyl ketone
CN 5-Methyl-2-hexanone
CN Isoamyl methyl ketone
CN Isopentyl methyl ketone
CN Methyl isoamyl ketone
CN Methyl isopentyl ketone
CN MIAK
FS 3D CONCORD
MF C7 H14 O
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, DIPPR*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: PREP (Preparation); PROC (Process); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

657 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
659 REFERENCES IN FILE CAPLUS (1907 TO DATE)
14 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 12 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **109-55-7** REGISTRY
CN 1,3-Propanediamine, N,N-dimethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:
CN (3-Aminopropyl)dimethylamine
CN (3-Dimethylaminopropan-1-yl)amine
CN .gamma.-Dimethylaminopropylamine
CN 1-(Dimethylamino)-3-aminopropane
CN 1-Amino-3-(dimethylamino)propane
CN 3-(Dimethylamino)-1-aminopropane
CN 3-(Dimethylamino)-1-propanamine
CN 3-(Dimethylamino)-1-propylamine
CN 3-(Dimethylamino)propanamine
CN 3-(Dimethylamino)propylamine
CN 3-Amino-1-(dimethylamino)propane
CN 3-N,N-Dimethylaminopropylamine
CN N,N-Dimethyl-1,3-diaminopropane
CN N,N-Dimethyl-1,3-propanediamine
CN N,N-Dimethyl-1,3-propylenediamine
CN N,N-Dimethyl-N-(3-aminopropyl)amine
CN N,N-Dimethylpropylenediamine
CN N,N-Dimethyltrimethylenediamine
CN N-Aminopropyl-N,N-dimethylamine
CN NSC 1067
FS 3D CONCORD
DR 68497-58-5
MF C5 H14 N2
CI COM
LC STN Files: ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

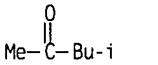
$H_2N-(CH_2)_3-NMe_2$

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3722 REFERENCES IN FILE CA (1907 TO DATE)
1105 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3727 REFERENCES IN FILE CAPLUS (1907 TO DATE)
35 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 13 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN

RN **108-10-1** REGISTRY
CN 2-Pentanone, 4-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2-Methyl-4-pentanone
CN 2-Methylpropyl methyl ketone
CN 4-Methyl-2-oxopentane
CN 4-Methyl-2-pentanone
CN Hexone
CN Isobutyl methyl ketone
CN Isopropylacetone
CN Methyl 2-methylpropyl ketone
CN Methyl iso-butyl ketone
CN Methyl isobutyl ketone
CN MIBK
CN MIK
CN NSC 5712
FS 3D CONCORD
MF C6 H12 O
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, DIPPR*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

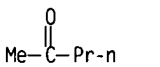


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8913 REFERENCES IN FILE CA (1907 TO DATE)
260 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
8917 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 14 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **107-87-9** REGISTRY
CN 2-Pentanone (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4-Methyl-2-butanone

CN Ethylacetone
CN Methyl n-propyl ketone
CN Methyl propyl ketone
CN NSC 5350
CN Propyl methyl ketone
FS 3D CONCORD
MF C5 H10 O
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, DIPPR*, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5179 REFERENCES IN FILE CA (1907 TO DATE)
36 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5186 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 15 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **78-93-3** REGISTRY
CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3-Butanone
CN Butanone
CN Ethyl methyl ketone
CN MEK
CN Methyl ethyl ketone
FS 3D CONCORD
DR 135311-02-3
MF C4 H8 O
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,

CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

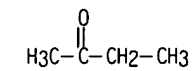
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



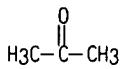
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

22808 REFERENCES IN FILE CA (1907 TO DATE)
236 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
22839 REFERENCES IN FILE CAPLUS (1907 TO DATE)
10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 16 OF 16 REGISTRY COPYRIGHT 2005 ACS on STN
RN **67-64-1** REGISTRY
CN 2-Propanone (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Acetone (8CI)
CN Methyl ketone (6CI)
OTHER NAMES:
CN .beta.-Ketopropane
CN Dimethyl ketone
CN Dimethylformaldehyde
CN NSC 135802
CN Propanone
CN Pyroacetic ether
FS 3D CONCORD
MF C3 H6 O
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB

Search done by Noble Jarrell

(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



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811 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
71277 REFERENCES IN FILE CAPLUS (1907 TO DATE)
22 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-224436 [21] WPIX
CR 2004-167955 [16]
DNC C2004-088594
TI Production of secondary amine product comprises heating mixture comprising hydrogen, carbonyl compound and primary amine reactant in presence of catalyst comprising metallic palladium.
DC A25 E19 J04
IN NELLI, C H; SU, W
PA (HUNT-N) HUNTSMAN PETROCHEMICAL CORP
CYC 1
PI US 2004019238 A1 20040129 (200421)* 7 C07C002-00 <--
ADT US 2004019238 A1 CIP of US 2002-200361 20020722, US 2003-623293 20030718
PRAI US 2003-623293 20030718; US 2002-200361 20020722
IC ICM C07C002-00
AB US2004019238 A UPAB: 20040326
NOVELTY - Producing a secondary amine product comprises heating a mixture comprising hydrogen, a carbonyl compound and a primary amine reactant to 80-230 deg. C and under 100-3000 psig in the presence of a catalyst comprising metallic palladium.
DETAILED DESCRIPTION - Producing a secondary amine product comprises heating a mixture comprising hydrogen, a carbonyl compound of formula R'-C(=O)-R and a primary amine reactant of formula R-NH2 to 80-230 deg. C and under 100-3000 psig in the presence of a catalyst comprising metallic palladium. The secondary amine has the formula RNH-CH(R')(R).
R = alkyl, aminoalkyl, alkylaryl, or aminoalkyl;
R', R = H or 1-20C alkyl, provided that both R' and R are not simultaneously H.
The amount of tertiary amine produced during the process is less than 3.00 weight% of the total amount of secondary amine produced.
An INDEPENDENT CLAIM is also included for a process for producing a secondary amine product from a primary amine reactant.
USE - For producing a secondary amine product, preferably N,N'-diisopropylisophorone diamine (claimed) that may be used as catalysts for the production of polyurethanes and polyureas.
ADVANTAGE - The process of the invention has high conversion rates and high selectivities, both greater than 95% on a first pass through the reactor.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A02-A10; E10-B01E; E10-B04C2; E11-F07A; J04-E04; N02-F01; N07-D08A

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